5.2.9. -- Human Systems Integration (HSI)

For all programs regardless of acquisition category, the PM shall initiate a comprehensive strategy for HSI early in the acquisition process to minimize ownership costs and ensure that the system is built to accommodate the human performance characteristics of the user population that will operate, maintain, and support the system. The PM shall work with the manpower, personnel, training, safety and occupational health (see 5.2.10), habitability, survivability, and human factors engineering (HFE) communities to translate the HSI thresholds and objectives in the ORD into quantifiable and measurable system requirements. The PM shall include these requirements in specifications, the Test and Evaluation Master Plan, and other program documentation, as appropriate, and use them to address HSI in the statement of work and contract. The PM shall identify any HSI-related schedule or cost issues that could adversely impact program execution.


5.2.9.1. -- Human Factors Engineering (HFE)

The PM shall employ HFE during systems engineering (to include function allocation) to provide for effective human-machine interfaces. Where practicable and cost effective, design efforts shall seek to reduce manpower and training requirements. Design efforts shall minimize or eliminate system characteristics that require excessive cognitive, physical, or sensory skills; require extensive training or workload-intensive tasks; result in mission-critical errors; or produce safety or health hazards.


5.2.9.2. -- Habitability and Personnel Survivability

The PM shall work with the habitability and survivability representatives (see 2.8.3) to set requirements for the physical environment and, if appropriate, essential personal services (e.g., clergy) and minimum living conditions (e.g., berthing and bathing) that have a direct impact on sustained mission effectiveness and recruitment and retention.


5.2.9.3. -- Manpower Initiatives

The PM shall work with manpower and functional representatives to identify workload intensive tasks, process improvements, design options, or other initiatives to reduce manpower, improve the efficiency or effectiveness of support services, or enhance the cross-functional integration of support activities.


5.2.9.4. -- Personnel Initiatives

The PM shall consider current personnel policy and recruitment trends to better define the human performance characteristics of the user population. In as much as possible, systems shall not require special cognitive, physical, or sensory skills beyond that found in the average recruit.

5.2.9.5. -- Training

As platform functions become increasingly automated, HSI shall match the cognitive processes of the operators and maintainers to the information processes of the platform.  Training subsystems, including training aids, devices, simulations, and simulators (TADSS) and embedded training capability (where appropriate), shall evolve from being separate support functions into being an integral part of the platform's information architecture.  The PM shall consider design options and emerging training technologies that can improve the users' performance and readiness, and reduce individual, collective, and joint training costs.  The PM shall maximize simulation-supported embedded training.  Training systems shall fully support and mirror the interoperability of the operational system.  The PM shall base training decisions on a cost and training effectiveness analysis that looks at full life-cycle training costs (see DoDD 1300.1389).  The PM shall document manpower and training requirements in a training plan, as soon as possible after program initiation.